SECRET

IN: 85611

OSA 1-15

INFO CITE

SECRET 091548Z CITE [redacted] 25X1A

[redacted] 25X1A

IDEALIST

SUBJECT: EVALUATION OF MISSION GT 67-466

1. THE DELTA III (112-B) CAMERA SYSTEM, UNITS I-9 AND I-10, FLOWN ON 29 NOVEMBER 1967 WAS USED TO PROVIDE MATERIAL FOR THE EVALUATION OF BIMAT PROCESSING. MOBILE RESOLUTION TARGETS, 51/51 "T" BAR TYPE, WERE DISPLAYED AT TUCSON AND PHOENIX. PASSES WERE MADE OVER BOTH TARGET DISPLAYS TOWARD AND AWAY FROM THE SUN TO PROVIDE NEGATIVES FROM BOTH THE FWD AND AFT CAMERAS WITH THE SAME SOLAR AZIMUTH TO CAMERA (LOOK) AZIMUTH RELATIONSHIP. THE TARGET AREAS WERE CLOUD FREE AND THE VEHICLE MAINTAINED PROGRAMMED ALTITUDE AND HEADINGS FOR THE ACQUISITION OF BOTH TARGETS. COMPLETE SITE MANNING REPORTS WERE RECEIVED WITH THE MISSION. 25X1A

2. THE FWD MATERIAL WAS PROCESSED AT [redacted] USING BIMAT TRANSFER FILM (SO-111). THE AFT MATERIAL WAS PROCESSED AT [redacted] USING 25X1A CONVENTIONAL FIELD METHODS (VERSAMAT). AFTER PROCESSING THE

SECRET

 COPY NO. 6

NEGATIVE WITH BIMAT TRANSFER FILM THE NEGATIVE WAS WASHED AND DRIED IN A VERSAMAT AND THE BIMAT TRANSFER FILM, WHICH IS A POSITIVE REPRODUCTION, WAS COVER SHEETED TO PROTECT THE EMULSION FROM ABRASIONS. THREE ADDITIONAL REPRODUCTIONS WERE MADE FROM THE NEGATIVE; ONE WAS PROCESSED IN THE STANDARD PROCESSING SYSTEM (DALTON), THE SECOND WAS PROCESSED USING DRIMAT TRANSFER FILM AND THE THIRD WAS PROCESSED USING BIMAT TRANSFER FILM. THE NEGATIVE AND THE FOUR REPRODUCTIONS FROM THE FWD WERE FORWARDED FOR EVALUATION. THE AFT MATERIAL WAS PROCESSED IN A VERSAMAT USING A CONVENTIONAL DEVELOPER AND FIXER AND THE NEGATIVE WAS FORWARDED FOR EVALUATION.

3. UPON RECEIPT OF THE MATERIAL SELECTED FRAMES INCLUDING THE RESOLUTION TARGETS WERE REMOVED FROM THE ROLLS AND USED FOR THE EVALUATION. THE RESOLUTION TARGETS WERE READ BY FIVE EVALUATORS AND THE RESULTS ARE AS FOLLOWS:

	VEHICLE HEADING	AZIMUTH CAM	AZIMUTH SUN	MEAN RESOLUTIONS ALONG	MEAN RESOLUTIONS ACROSS
FRAME	(DEGREES)	(DEGREES)		(INCHES)	
064-F	210	210	25	38.1	34.0
182-A	30	210	27	15.1	19.0
070-A	210	30	25	15.1	17.0
176-F	30	30	27	19.0	19.0
346-F	40	40	36	17.0	17.0
494-A	220	40	38	15.1	19.0
352.A	40	220	36	17.0	19.0
488.F	220	220	38	19.0	19.0

AFT FWD
15.6 18.3
18.5 18.3
17.1 18.3

1.07:1
1.123 = 9/2

NOTES: FRAME 064-F APPEARS TO BE SLIGHTLY DEGRADED DUE TO VEHICLE

VIBRATION. THE BEST RESOLUTIONS (13.5 INCHES) WERE DETECTED IN FRAMES 070-A, 182-A, AND 494-A. DUE TO THE SIMILARITY IN RESOLUTION READINGS AND IMAGERY EVALUATED, 20X AND 40X ENLARGEMENTS WERE NOT MADE FROM THIS MISSION.

4. THE DETERIORATION OF THE BIMAT REPRODUCTION (PROGRESSIVE INCREASE IN DENSITY AND APPARENT LOSS IN RESOLUTION AND TONAL QUALITY) NEGATES THE USE OF THIS REPRODUCTION IN READING THE RESOLUTION TAGRETS. AT THE TIME OF RECEIPT OF THE MATERIAL, PROJECTS WITH HIGHER PRIORITY REQUIRED THE ATTENTION OF THE EVALUATORS. THE BIMAT REPRODUCTIONS WERE VIEWED UPON RECEIPT AND DID HAVE SUFFICIENT RESOLUTION AND TONAL QUALITY TO WARRANT ADDITIONAL TESTING. BECAUSE OF THE LIMITED LIFE OF THE BIMAT POSITIVE, FUTURE TESTS SHOULD BE SCHEDULED SO THE EVALUATION CAN BE PERFORMED IMMEDIATELY UPON RECEIPT OF THE MATERIAL AS WOULD BE THE CASE IN THE EXPLOITATION OF AN OPERATIONAL MISSION.

5. THE CONVENTIONAL REPRODUCTION MADE FROM THE BIMAT PROCESSED NEGATIVE IS TYPICAL OF OTHER REPRODUCTIONS PROCESSED IN THE DALTON. THE RESOLUTION AND TONAL QUALITY ARE COMPARABLE TO THE BEST SEEN FROM THE 112-B SYSTEM. REPRODUCTIONS WERE NOT PROVIDED FROM THE AFT NEGATIVES.

6. THE DRIMAT REPRODUCTIONS ARE SOMEWHAT DENSER THAN THE CONVENTIONAL REPRODUCTIONS AND RETAIN APPROXIMATELY THE SAME RESOLUTIONS BUT APPEAR TO HAVE LESS TONAL VARIATION. THE REPRODUCTIONS WERE VIEWED ON A STANDARD LIGHT TABLE THAT EMITS 900 FOOT LAMBERTS OF LIGHT AT A TEMPERATURE OF 9500 DEGREES KELVIN. A BRIGHTER LIGHT SOURCE MAY PROVIDE BETTER DIFFERENTIATION IN THE

DENSITIES AND THUS BETTER TONAL QUALITIES.

7. THE BIMAT PROCESSED REPRODUCTIONS ARE NOT AS DENSE AS THE DRIMAT REPRODUCTIONS BUT DENSER THAN THE CONVENTIONAL REPRODUCTIONS. THEY ARE SIMILAR IN QUALITY TO THE DRIMAT REPRODUCTIONS.

8. THE BIMAT AND DRIMAT REPRODUCTIONS WERE RECEIVED ON PLASTIC, CAMERA TYPE, TAKE-UP CORES THAT ARE NOT COMPATIBLE WITH EVALUATION OR EXPLOITATION EQUIPMENT. JURY-RIGS WERE IMPROVISED TO VIEW THE MATERIAL. AN ATTEMPT WAS MADE TO SPOOL THE MATERIAL ONTO CONVENTIONAL 70 MM SPOOLS BUT THE MATERIAL IS TOO WIDE TO FIT INSIDE THE FLANGES. IT IS REQUESTED THAT FUTURE TESTS BE SPOOLED ON FIVE INCH SPOOLS TO FACILITATE EXISTING EQUIPMENT. THE BIMAT AND DRIMAT MATERIAL ADHERES TO THE LIGHT TABLE AND MUST BE LIFTED AWAY FROM THE GLASS FOR WINDING.

9. QUESTIONS THAT COULD NOT BE ANSWERED WOULD INCLUDE:

A. CAN THE BIMAT REPRODUCTIONS BE USED TO ADEQUATELY EXPLOIT A MISSION FOR A FIRST PHASE REPORT (IPIR)?

B. ARE THE BIMAT REPRODUCTIONS SUFFICIENTLY STABLE FOR MENSURATION?

C. CAN THE BIMAT REPRODUCTIONS BE USED TO MAKE DUPE NEGATIVES FOR BRIEFING BOARDS?

10. CONCLUSIONS AND RECOMMENDATIONS:

A. BIMAT PROCESSING MAY BE USEFUL FOR CRISIS MANAGEMENT EXPLOITATION.

B. THE FAVORABLE RESULTS FROM BIMAT PROCESSING INDICATES THAT ADDITIONAL TESTS SHOULD BE CONDUCTED.

C. THE PROCESSING FILM, SO-111, SHOULD BE CUT TO SOMETHING

25X1A

NARROWER THAN 70 MM TO PERMIT SPOOLING ON 70 MM SPOOLS.

D. A MENSURATION ANALYSIS SHOULD BE CONDUCTED TO DETERMINE THE STABILITY OR IMAGE DISLOCATION IN THE BIMAT POSITIVE.

S E C R E T TOR: 091626Z JAN 68